

ABSTRACT OF THE DISCLOSURE

An light oscillation part including an active layer 20 for generating light by current injection, a tuning layer 24 with an intermediate layer 22 formed between the active layer 20 and the tuning layer 24, for varying an oscillation wavelength by current injection and a diffraction grating 28 formed near the active layer 20 and the tuning layer 24, and a light amplification part including an active layer 20 for amplifying light by current injection are formed on a semiconductor substrate. Light oscillation elements having wide wavelength variation ranges and the light amplification are integrated on a semiconductor substrate, whereby wide wavelength variation ranges can be obtained and the output light can be much increased.